CLAIMS

1.   A method for synchronizing information between a client and a server comprising the steps of:

initializing a communication system, said communication system

5   comprising a plurality of objects, said objects capable of:

maintaining keys and values;

displaying a means to accept user input; and

determining when to invoke an action;

constructing a first package;

10   transmitting said first package to said server;

constructing a second package;

transmitting said second package to said client; and

updating said keys and said values.

15   2.   The method of claim 1 wherein said initialization step

comprises the steps of:

creating a controlling object;

surveying said plurality of objects;

creating associations;

20   connecting said associations to said plurality of objects;

creating an action coordinator; and

connecting said associations to said action coordinator.

3.   The method of claim 2 wherein said initialization step further

25   comprises the steps of:

extracting said keys and said values from said plurality of objects; and

creating a client dictionary of said extracted keys and extracted values on said client.

4.   The method of claim 1 wherein said first package is comprised of:

said keys; and

said values.

5.   The method of claim 3 wherein said step of constructing a first package comprises the steps of:

comparing said keys and said values to said dictionary keys and said dictionary values; and

placing said keys and their corresponding values that have changed in said first package.

6.   The method of claim 2 wherein said step of transmitting said first package comprises the steps of:

transmitting said first package from said action coordinator to a communications channel; and

transmitting said first package from said communications channel to said server.

7.   The method of claim 1 wherein said step of transmitting said first package further comprises the step of binding said keys to variables in said server.

5   8.   The method of claim 1 wherein said step of initializing a communications system further comprises the step of creating a server dictionary of said keys and said values on said server.

9.   The method of claim 8 wherein said step of transmitting said
10   first package further comprises the steps of:
      updating said server dictionary with said keys and said values from said package; and
      binding said server dictionary's values to variables in said server.

15   10.   The method of claim 4 wherein said step of transmitting said first package to said server further comprises the step of binding said values from said first package to variables in said server.

11.   The method of claim 10 wherein said second package comprises
20   updated keys and updated values.

12.   The method of claim 8 wherein said step of constructing a second package further comprises the steps of:
      comparing said bound variables with said server dictionary's values;
25   and

placing said keys and said values that have changed in said second package.

13.   The method of claim 6 wherein said step of transmitting said second package comprises the steps of:

transmitting said second package from said server to said communications channel; and

transmitting said second package from said communications channel to said action coordinator.

14.   The method of claim 3 wherein said step of updating said keys and said values further comprises the step of updating said client dictionary with said keys and said values from said second package.

15.   The method of claim 11 wherein said step of updating said keys and said values comprises the steps of:

transmitting said keys and said updated values to said objects; and displaying said updated values.

16.   The method of claim 2 wherein said step of updating said keys and said values further comprises the steps of:

transmitting updated values from said second package to said action coordinator;

transmitting said updated values from said action coordinator to said associations;

distributing said updated values from said associations to said objects; and

displaying said updated values.

5   17.   An article of manufacture comprising:

a computer usable medium having computer readable program code embodied therein for synchronizing information between a client and a server, the computer readable program code in said article of manufacture comprising:

10   computer readable program code configured to cause a computer to initialize a communication system, said communication system comprising a plurality of objects, said objects containing computer readable program code configured to cause said computer to:

maintain keys and values;

15   display a means to accept user input; and

determine when to invoke an action;

computer readable program code configured to cause said computer to construct a first package;

computer readable program code configured to cause said computer to

20   transmit said first package to said server;

computer readable program code configured to cause said computer to construct a second package;

computer readable program code configured to cause said computer to transmit said second package to said client; and

computer readable program code configured to cause said computer to update said keys and said values.

18.   The article of manufacture of claim 17 wherein said computer readable program code configured to cause said computer to initialize a communication system further comprises:

computer readable program code configured to cause said computer to create a controlling object;

computer readable program code configured to cause said computer to survey said plurality of objects;

computer readable program code configured to cause said computer to create associations;

computer readable program code configured to cause said computer to connect said associations to said plurality of objects;

computer readable program code configured to cause said computer to create an action coordinator; and

computer readable program code configured to cause said computer to connect said associations to said action coordinator.

19.   The article of manufacture of claim 18 wherein said computer readable program code configured to cause said computer to initialize a communication system further comprises:

computer readable program code configured to cause said computer to extract said keys and said values from said plurality of objects; and

computer readable program code configured to cause said computer to create a client dictionary of said extracted keys and extracted values on said client.

5   20.   The article of manufacture of claim 17 wherein said first package is comprised of:

said keys; and

said values.

10   21.   The article of manufacture of claim 19 wherein said computer readable program code configured to cause said computer to construct a first package comprises:

computer readable program code configured to cause a computer to compare said keys and said values to said dictionary keys and said dictionary

15   values; and

computer readable program code configured to cause a computer to place said keys and their corresponding values that have changed in said first package.

20   22.   The article of manufacture of claim 18 wherein said computer readable program code configured to cause said computer to transmit said first package comprises:

computer readable program code configured to cause a computer to transmit said first package from said action coordinator to a communications

25   channel; and

computer readable program code configured to cause a computer to transmit said first package from said communications channel to said server.

23. The article of manufacture of claim 17 wherein said computer readable program code configured to cause said transmit said first package further comprises computer readable program code configured to cause a computer to bind said keys to variables in said server.

24. The article of manufacture of claim 17 wherein said computer readable program code configured to cause said computer to initialize a communications system further comprises computer readable program code configured to cause a computer to create a server dictionary of said keys and said values on said server.

25. The article of manufacture of claim 24 wherein said computer readable program code configured to cause said computer to transmit said first package further comprises:

computer readable program code configured to cause a computer to update said server dictionary with said keys and said values from said package; and

computer readable program code configured to cause a computer to bind said server dictionary's values to variables in said server.

26. The article of manufacture of claim 17 wherein said computer readable program code configured to cause said computer to transmit said

first package to said server further comprises computer readable program code configured to cause a computer to bind said values from said first package to variables in said server.

27.   The article of manufacture of claim 26 wherein said second package comprises updated keys and updated values.

28.   The article of manufacture of claim 24 wherein said computer readable program code configured to cause said computer to construct a second package further comprises:

computer readable program code configured to cause a computer to compare said bound variables with said server dictionary's values; and

computer readable program code configured to cause a computer to place said keys and said values that have changed in said second package.

29.   The article of manufacture of claim 22 wherein said computer readable program code configured to cause said computer to transmit said second package comprises:

computer readable program code configured to cause a computer to transmit said second package from said server to said communications channel; and

computer readable program code configured to cause a computer to transmit said second package from said communications channel to said action coordinator.

30. The article of manufacture of claim 19 wherein said computer readable program code configured to cause said computer to update said keys and said values further comprises computer readable program code configured to cause a computer to update said client dictionary with said

5   keys and said values from said second package.

31. The article of manufacture of claim 27 wherein said computer readable program code configured to cause said computer to update said keys and said values comprises:

10   computer readable program code configured to cause a computer to transmit said keys and said updated values to said object; and

computer readable program code configured to cause a computer to display said updated values.

15   32. The article of manufacture of claim 18 wherein said computer readable program code configured to cause said computer to update said keys and said values further comprises:

computer readable program code configured to cause a computer to transmit updated values from said second package to said action coordinator;

20   computer readable program code configured to cause a computer to transmit said updated values from said action coordinator to said associations;

computer readable program code configured to cause a computer to distribute said updated values from said associations to said objects; and

computer readable program code configured to cause a computer to display said updated values.

33.   The method of claim 1 further comprising the step of invoking a method.

34.   The article of manufacture of claim 17 further comprising computer readable program code configured to cause a computer to invoke a method.

35.   The method of claim 4 wherein said first package is further comprised of a reference to said action.

36.   The article of manufacture of claim 20 wherein said first package is further comprised of a reference to said action.

37.   The method of claim 5 further comprising the step of placing a reference to said action in said first package.

38.   The article of manufacture of claim 21 further comprising computer readable program code configured to cause a computer to place a reference to said action in said first package.